MINUTES OF THE NUTRITION COORDINATING COMMITTEE (NCC) MEETING, NATIONAL INSTITUTES OF HEALTH (NIH)

Rockledge 2, Conference Room 9100-9104, Bethesda, MD
May 2, 2013 2:00 – 4:00 PM

WELCOME

Dr. Van Hubbard, Director of the NIH Division of Nutrition Research Coordination (DNRC), convened the meeting at 2:01 PM and welcomed participants. Phone participants included the following: CAPT Shirley Blakely, FDA; Dr. Josephine Boyington, NIH NHLBI; Dr. Nadine Braunstein, Towson University; Dr. Deirdra Chester, USDA NIFA; Dr. Paul Cotton, NIH NINR; Dr. Stephanie Goodwin, ODPHP; Dr. Shefa Gordon, NIH NEI; Ms. Michele Lawler, HRSA; Dr. Jessica Leighton, FDA; Dr. Marya Levintova, NIH FIC; Dr. Samara Joy Nielsen, CDC NCHS; Dr. Rick Olson, ODPHP; Dr. John Milner, USDA ARS; Dr. Mary Poos, FDA; Dr. Dan Raiten, NIH NICHD; Dr. Josh Rosenthal, NIH FIC; Ms. Dana Sampson, NIH OBSSR; Dr. Kelley Scanlon, CDC; Dr. Megan Singh, NIH NIDDK; Dr. Derrick Tabor, NIH NIMHD; Dr. Robert Tilghman, NIH NIDDK; and Dr. Susan Volman, NIH NIDA. The agenda for the meeting is provided as Appendix A and the list of attendees is provided as Appendix B.

APPROVAL OF MINUTES FROM THE APRIL 4, 2013 NCC MEETING

Minutes from the April 4, 2013 NCC meeting had previously been sent to NCC members via email. Dr. Hubbard asked if there were any other corrections to the minutes. There were none. Dr. Peter Greenwald, NIH National Cancer Institute (NCI) made a motion to approve the minutes, and Dr. Namanjeet Ahluwalia, CDC National Center for Health Statistics (NCHS) seconded the motion. The minutes were thus approved and will be posted on the DNRC website, http://www.dnrc.nih.gov, along with the minutes from the previous NCC meetings.

BRAIN RESPONSES TO VISUAL IMAGES OF FOOD: COULD YOUR EYES BE THE GATEWAY TO EXCESS?

Dr. William D. “Scott” Killgore is the Co-Director of the Social Cognitive and Affective Neuroscience Laboratory and Associate Professor in the Department of Psychiatry at McLean Hospital/Harvard Medical School, Center for Depression, Anxiety and Stress Research. He shared findings from his research using functional magnetic resonance imaging (fMRI) to study the cerebral responses of individuals viewing images of high and low-calorie foods.

Dr. Killgore's work has shown that the human brain responds differentially to images of high- and low-calorie foods. There are four regions in the brain that are activated in response to food stimuli: the prefrontal cortex, amygdala, insula, and hippocampus. Several brain regions are activated consistently across all food conditions, regardless of caloric content, whereas other regions respond specifically to images of desirable, high-calorie food items. His work has shown that response to food images can be modulated by a number of factors, including age, gender, mood, and BMI.

In one of Dr. Killgore's studies, cerebral responses to food images were compared in adults and girls, ages 9-15. Results indicated that age-related changes in cerebral functioning develop from lower-order sensory processing toward higher-order processing of stimuli via prefrontal cortical systems involved in reward anticipation, self-monitoring, and behavioral inhibition. In another study, cerebral responses were compared by gender. Women appear to be more responsive than men within cortical regions involved in behavior control and self-referential cognition when viewing high-calorie food images. Gender also had a differential effect on the ability to predict BMI by modeling brain activation in response to images of food. Among women, modeling could account for 76% of the variance in BMI for women, however, in men, the same regions were not predictive of weight status.

More recently, Dr. Killgore has looked at the relationship between general daytime sleepiness, brain responses to food stimuli, and self-reported overeating. In his study, daytime sleepiness correlated with reduced activation in the ventromedial prefrontal cortex during perception of high- versus low-calorie food images. Among women, activation within this cluster predicted overeating. These findings suggest that normal fluctuations in sleepiness may be sufficient to affect brain regions important for regulating food intake, but that these effects may differ between men and women.

OFFICE OF DISEASE PREVENTION AND HEALTH PROMOTION (ODPHP) UPDATE

Ms. Holly McPeak and Dr. Kellie Casavale provided updates from ODPHP:

2015 Dietary Guidelines Advisory Committee

Nominees have been cleared through the White House Liaison. The Nomination Package is being sent for signature to Secretary Sebelius, and then to USDA Secretary Vilsack for co-signature.

Next steps: Official appointment of the DGAC by the Secretaries, followed by a Press Release announcing the new Committee's membership. A *Federal Register* Notice will

announce the first meeting of the DGAC accompanied by content posted on DietaryGuidelines.gov with first meeting details, meeting registration, and initiating public comment submission through the Public Comments Database.

Nomination for New DRI Reviews

A Federal Register [PDF - 197KB] Notice was posted on April 29, 2013 announcing the nominations for nutrients to be considered for review prioritization. The Nomination requirements are specified on www.health.gov/DRI. The DRI Committees (US and Canada) will accept nominations from April 29, 2013 through 11:59 p.m. EDT on July 31, 2013. The process has been briefly outlined in the Dietary Reference Intake (DRI) Nomination Process diagram. Any questions about the nomination process can be forwarded to: DRInominations@hhs.gov.

Dr. Pam Starke-Reed, DNRC, also mentioned that the DRI subcommittee of the Interagency Committee on Human Nutrition Research (ICHNR) will be convening soon. The date will be shared as it becomes available.

Health Communications and e-Health Division

The Health Communications and e-Health Division received a Clearmark Award for the Healthfinder.gov website (Plain Language).

Healthy People

Leading Health Indicators (LHI) Webinar: Mental Health

Suicide is a serious public health problem that affects individuals in various life stages. For youth between the ages of 10 and 24, suicide is the third leading cause of death. It results in approximately 4,600 lives lost each year. Suicides and suicide-related behaviors have a profound toll on American Indian and Alaska Native individuals and communities, particularly among their youth. The suicide rate among American Indian/Alaska Native adolescents and young adults ages 15 to 34 (31 per 100,000) is 2.5 times higher than the national average for that age group (12.2 per 100,000).

Join HealthyPeople on Thursday, May 23, at 12:00 PM EDT as they highlight how one Tribe has been successful in using data to drive decisions and interventions for addressing youth suicide. This 45-minute Webinar will be led by U.S. Department of Health and Human Services Deputy Assistant Secretary for Disease Prevention and Health Promotion, Dr. Don Wright, and will include a roundtable discussion on the impact of this critical Leading Health Indicator topic.

Register now:

https://hhs-faca.webex.com/hhs-faca/onstage/g.php?t=a&d=992163439

NANOBIOTECHNOLOGY AND NUTRITION BENEFITS WITH BETTER RISK ASSESSMENT

Dr. Linda Duffy, gave a presentation on May 1st at the American Registry of Professional Animal Scientists' (ARPAS) mini-symposium, "Nanotechnology – Potential Applications in Food, Feed, Agricultural Production and Research" and shared an overview of the presentation with the NCC. Her presentation focused on nanobiotechnology and nutrition benefits with better risk assessment. Dr. Duffy serves on the Nanotechnology Working Group, along with several other members known to the NCC including Dr. Starke-Reed, DNRC; Dr. Sharon Ross, NCI; Dr. Steven Zullo, NIBIB, and Dr. John Milner, USDA ARS.

Dr. Duffy listed several applications of nanotechnology for food safety. Examples included nano-sensing – for food packaging, freshness, and sustainability; edible and biosensor nanoparticle sensors – to detect food quality and safety; carbon nanotube and surface-enhanced Raman spectroscopy nanosensor arrays – for identifying presence of pathogens, toxins; and DNA barcoding methods – for detecting pathogen targets in the environment and foods. Dr. Duffy suggested that these types of approaches could potentially be used in conjunction with studies of the microbiome. Despite the potential benefits, there needs to be special consideration given to the antimicrobial actions of nanoparticles on normal microflora. There may also be potential hazards not present for a parent compound due to kinetics, as the absorption, distribution, metabolism and excretion [ADME profiles] of nanoparticles can differ greatly from that of larger soluble substances. Changes in kinetics [bioavailability] raises particular concern since cellular uptake may result in bioaccumulation of nanoparticles and whenever higher plasma levels of a substance are obtained, then faster thresholds of toxicity can also be exceeded. For all of the reasons above, alternative methods in how to measure risk assessment need to be considered where size matters at the cellular level and cell surface metrics may replace dosimetry; and parallel ADME testing might accompany cells-on-a-chip biokinetics in determining biologic fate, transport, and metabolomic measurement on the nanoscale.

Finally, following the Guidelines and recommendations that resulted from the National Nanotechnology Initiative and the *NIH/USDA Workshop on Using Nanotechnology to Enhance Nutrition, Bioavailability and Efficacy* in 2011, there are many ethical, legal, and societal implications of nutritional nanotechnology. To address some of these issues, more research and evaluation is needed across multiple areas. It is important to increase scientific understanding of nanoscale additives in novel food matrices and biotherapies for delivery of important micronutrients and "bioactive" compounds. To move forward, it will be important to continue to develop discussion forums,

conferences, between NIH, USDA, and FDA to address both concerns and benefits. It will be imminently important that stakeholders from industry and government coordinate their efforts in guiding the output of scientific risk analyses and continue to engage the public, being sensitive to different risk perceptions the public is concerned about regarding development of nano-foods.

ODS UPDATE

Dr. Cindy Davis provided several updates from ODS:

Dietary Supplement Label Database;

The repository for dietary supplement labels was released last week. The Dietary Supplement Label Database is a joint project of ODS and the National Library of Medicine (NLM). The database contains full label contents from a sample of dietary supplement products marketed in the U.S. Currently, it includes 17,000 supplement labels and is continually being updated. For more information, visit: http://dsld.nlm.nih.gov/

Botanical Research

NCCAM and ODS held a botanical research expert panel meeting on Monday, April 29. A draft of the report will be available in June.

ODS Seminar Series

The next ODS Seminar will be held on Wednesday, May 8, from 11:00 am-12:00 pm in Room J, 6130 Executive Blvd. Dr. Shrikant Anant, the University of Kansas Cancer Center, will be presenting, “Targeting Cancer Stem Cells: Are Natural Products Just Smarter?”

Vitamin D

A new article about common misconceptions about vitamin D and implications for clinicians is available online from Nature Reviews Endocrinology. Authors are Dr. Clifford Rosen and Dr. Christine Taylor. (http://www.nature.com/nrendo/journal/vaop/ncurrent/pdf/nrendo.2013.75.pdf).

Dr. Hubbard added that the American Academy of Pediatrics recently issued a new Clinical Report entitled “Calcium and Vitamin D Requirements of Enterally Fed Preterm Infants” as a new policy statement from its Committee on Nutrition (http://pediatrics.aappublications.org/content/131/5/e1676.abstract?rss=1).

REPORTS FROM NCC MEMBERS AND LIAISONS

- Dr. Van Hubbard welcomed Dr. Susan Volman, a Program Director at the National Institute on Drug Abuse, to the NCC.

- Dr. Hubbard also announced that in addition to gaining a member, the NCC will be losing another. Ms. Jean Charles-Azure, Indian Health Service, will be retiring from federal service this summer. The DRNC presented Ms. Charles-Azure with a certificate in appreciation of her many years of collaboration and service to the NCC. She will be greatly missed and is wished all the best in retirement.

- Dr. Pam Starke-Reed, DNRC, a member of the planning committee for the next Food Forum, announced that it will be held on May 7-8 in Washington DC at the National Academy of Sciences' building, 2101 Constitution Avenue, NW. This meeting will be a 1.5 day public workshop titled "Sustainable Diets: Food for Healthy People and a Healthy Planet." The workshop will also be streamed live on the Internet (the link will be available on the IOM's homepage the day of the workshop) if you are not able to attend in person.

  The agenda and information on how to register is found here: http://www.iom.edu/Activities/Nutrition/FoodForum/2013-MAY-07.aspx.

- Dr. Dan Raiten, NICHD, provided a brief update on the B-24 project (*Evaluating the Evidence Base to Support the Inclusion of Infants and Children from Birth to 24 Months in the Dietary Guidelines)*. An overview of the project and remarks from each of the working groups were provided at the recent Experimental Biology meeting. Summary papers from each of the working groups will be submitted to the American Journal of Clinical Nutrition in a few weeks. Moving forward, the project will be covering the 1,000 day period from the start of a mother's pregnancy through her child's second birthday.

STRATEGIES TO INVIGORATE NUTRITIONAL SCIENCES RESARCH

At the April NCC meeting, Dr. Hubbard invited members and interested individuals to join a working group that will explore strategies to invigorate nutritional sciences research at NIH and to explore ways of encouraging applications in areas with identified research gaps. The next steps will be to arrange a conference call/in-person meeting to outline issues. Input from other agency liaisons is welcomed in order to leverage

perspectives. If you are interested in being part of this group, contact Dr. Hubbard (hubbardv@mail.nih.gov).

CURRENT DNRC UPDATE OF ACTIVITIES

Nutrition Education Subcommittee (NES):

The NES reviews nutrition education materials for consistency with the *Dietary Guidelines for Americans (DGAs), 2010.*

NES Chair, Dr. Margaret McDowell, NIH/DNRC reported the NES completed one dietary guidance review since the April meeting and is currently reviewing another submission.

1) The NES reviewed two brief folic acid information cards that were developed by CDC to provide women of childbearing age with information about the need and recommendations for folic acid. One card targets women who plan to become pregnant in the near future and the other card is designed for women who are not planning to become pregnant.

2) The NES is currently reviewing two nutrition education modules for the Girlshealth.gov website. The modules were recently updated to reflect the *Dietary Guidelines for Americans* 2010 recommendations. The materials target girls ages 10 to 16 and their parents and caregivers. Girlshealth.gov promotes healthy and positive behaviors in girls, giving them reliable and useful health information in a fun, easy-to-understand way. The website also provides information to parents and educators to help them teach girls about healthy living. The updated modules for girls and for parents and caregivers will be posted on the GirlsHealth.gov website. Link: http://www.girlshealth.gov/nutrition/

International Committee Information

Dr. Dan Raiten, NICHD, provided a quick update on the Biomarkers of Nutrition for Development (BOND) program. Reviews for each of 6 nutrients (iron, iodine, folate, zinc, vitamin A, and vitamin B12) were completed during Phase 1 of the project. Among the primary outcomes for the BOND program is the development of a Query-based System (QBS) to support a user's decision-making process with regard to potential biomarkers. A mock-up of the query-based system tool will be available soon. The tool will provide users with the opportunity to get evidence-based advice about what biomarkers would be most useful for a given need, level of expertise, and conditions of use.

Phase II of the BOND project will expand the approach to include evaluation of nutrient "clusters" linked via systems biology. Examples include Biomarkers in Growth (BIG), which will include a vitamin D "cluster," and Biomarkers in Neurological Development (BIND), which will include vitamins B1, B2, B5, LCPUFA, and aromatic amino acids (NT precursors).

HNRIM Update

Mr. Jim Krebs-Smith announced that FY 2012 data have been released. A request to initiate coding will be sent by email to each IC contact within the next week.

Probiotic and Prebiotic Working Group (PPWG)

- Dr. Linda Duffy, NCCAM, reminded the NCC that a one-day conference entitled "Probiotics, Prebiotics, and the Host Microbiome: The Science of Translation" will take place on June 12, 2013 at the New York Academy Sciences in New York, New York. The conference will be hosted by Sackler Institute for Nutrition Science at the New York Academy of Sciences and International Scientific Association for Probiotics and Prebiotics. For more information, please view the following website: http://www.nyas.org/Events/Detail.aspx?cid=c60ea8d5-44f0-4aaa-a8ff-3e5f008186f6

- Dr. John Milner, USDA ARS, announced that Dr. Elita Proctor, Coordinator of the Human Microbiome Project, National Human Genome Research Institute/NIH will be giving a seminar on "The Human Microbiome: Overview, First Principles and Future Research Directions" as part of the 2012-2013 Beltsville Human Nutrition Research Center Seminar Series. The seminar will take place on May 7 at 11:00 am in Building 307C, Conference Room 122, BARC-East

NEXT NCC MEETING

The next regularly scheduled NCC meeting will be on June 6, 2013.

ADJOURNMENT

The meeting was adjourned at 4:01 PM

LIST OF APPENDICES

Appendix A: NIH NCC Meeting Agenda for May 2, 2013
Appendix B: NIH NCC Meeting Attendees for May 2, 2013

APPENDIX A: NIH NUTRITION COORDINATING COMMITTEE MEETING AGENDA

Thursday, May 2, 2013
2:00 – 4:00 pm
Rockledge 2, CR#9100-9104

1. **Welcome**……..……..……..…….…….…….....Van Hubbard, DNRC
2. **Approval of Minutes of April 4, 2013 Meeting** ……..……..…Van Hubbard, DNRC
3. **Brain Responses to Visual images of Food: Could Your Eyes be the Gateway to Excess?**…….....William **"**Scott" Killgore, Harvard Medical School
4. **ODPHP Update**……..…….…...Holly McPeak, ODPHP
5. **Nanobiotechnology and Nutrition Benefits With Better Risk Assessment**.....Linda Duffy, NCCAM
6. **ODS Update** ……..…….……....Cindy Davis, ODS
7. **Reports from NCC Members and Liaisons** ……..…..……...…. NCC Members
8. **Strategies to Invigorate Nutritional Sciences Research**……...Van Hubbard, DNRC
9. **Current DNRC Update of Activities**….....……...… DNRC Staff
    - Nutrition Education Subcommittee Update…..……Margaret McDowell*
    - International Committee Information…,……Pam Starke-Reed/Dan Raiten
    - HNRIM Update……...…….Jim Krebs-Smith/Karen Regan
    - PPWG .....Crystal McDade-Ngutter
    - Wellness Workgroup .....Rachel Fisher/Margaret McDowell
10. **Next Meeting** – June 6, 2013

* Updates will be included in the minutes of the meeting only

APPENDIX B: NCC MEETING ATTENDEES FOR MAY 2, 2013

Agencies, Institutes, Centers, and Divisions	Members Present	Members Absent	Alternates Present	Other Individuals Present
DNRC Director	V Hubbard			
DNRC Deputy-Director	P Starke-Reed			
NIH MEMBERS				
NCI	S Ross			P Greenwald; S Hursen
NHLBI	K McMurry			J Boyington; A Ershow; C Pratt
NIDCR		M Cutting		
NIDDK	R Kuczmarski			M Singh; R Tilghman
NINDS		M Mitler		
NIAID		P Sato		
NIGMS		S Somers		
NICHD		G Grave	D Raiten	
NEI	S Gordon			
NIEHS		K Gray		
NIA	J Hannah			
NIAMS	X Wang			
NIDCD		B Wong		
NIMH		M Chavez		
NIMHD	D Tabor			
NIDA	S Volman			
NIAAA		R Breslow		
NINR	P Cotton			
NCCAM	L Duffy			
FIC	M Levintova			J Rosenthal
NHGRI		D Scholes		
NIH LIAISONS				
CC	A Courville			
CSR		R Garofalo		
NLM		M Corn		
OBSSR	D Sampson			
ODS		P Coates	C Davis	B Costello; B Sorkin
OD/ODP		B Portnoy		
PRCC		D Stredrick		
AGENCY LIAISONS				
AHRQ		I Mabry-Hernandez		
CDC/NCCDPHP	K Scanlon			
CDC/NCHS	N Ahluwalia			S Nielsen
FDA	M Poos		S Blakely	J Leighton
HRSA	M Lawler			
IHS		T Brown	J Charles-Azure	

Agencies, Institutes, Centers, and Divisions	Members Present	Members Absent	Alternates Present	Other Individuals Present
ODPHP	H McPeak			K Casavale; S Goodwin
USDA/ARS		D Klurfeld		J Milner
USDA/NIFA	D Chester			
DOD				

Guests: N Braunstein, Towson; S Killgore, Harvard; S Ohlhorst, ASN

DNRC: Y Chow; R Fisher; S Fleischhacker; K Friedl, J Krebs-Smith; C McDade-Ngutter; M McDowell; K Regan